

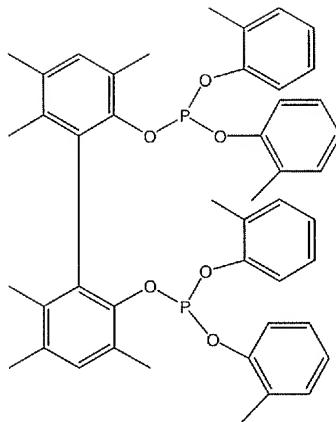
Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Amended) A process for hydrocyanation of at least one substrate selected from the group consisting of 2-pentenenitrile, 3-pentenenitrile, 4-pentenenitrile, and 2-methyl-3-butenenitrile comprising contacting the substrate with hydrogen cyanide in the presence of a zero-valent nickel hydrocyanation catalyst and a promoter, wherein said promoter is a byproduct of a method for producing titanium tetrachloride from titanium ore, said method comprising the steps of contacting a titanium-containing ore with chlorine under reducing conditions to obtain a gaseous reaction product, recovering titanium tetrachloride from the reaction product, thereby leaving behind a residue, and condensing the residue to obtain said byproduct, and wherein said byproduct comprises consists essentially of iron (II) chloride, and manganese (II) chloride, sand, and coke.
2. (Amended) A process comprising:
 - a) chlorinating a titanium-containing material, wherein the titanium-containing material contains iron oxide in an amount of about 0.5 to 50 percent by weight, to produce material a mixture of metal chlorides comprising titanium tetrachloride and other iron-based chlorides;
 - b) separating the titanium tetrachloride;
 - c) obtaining a byproduct material comprising iron-based chlorides consisting essentially of iron (II) chloride, manganese (II) chloride, sand, and coke;
 - d) using the byproduct material as a promoter in a process for hydrocyanation, said hydrocyanation process comprising contacting at least one substrate selected from the group consisting of 2-pentenenitrile, 3-pentenenitrile, 4-pentenenitrile, and 2-methyl-3-butenenitrile with hydrogen cyanide in the presence of a zero-valent nickel hydrocyanation catalyst and the promoter.

3. (Previously Presented) The process of claim 2, wherein the substrate is 2-pentenenitrile.
4. (Previously Presented) The process of claim 2, wherein the substrate is 3-pentenenitrile.
5. (Previously Presented) The process of claim 2, wherein the substrate is 4-pentenenitrile.
6. (Previously Presented) The process of claim 2, wherein the substrate is 2-methyl-3-butenenitrile.
7. (Cancelled)
8. (Previously Presented) The process of claim 2, wherein chlorinating a titanium-containing material is performed in a fluidized bed reactor.
9. (Previously Presented) The process of claim 2, wherein the byproduct material is used in a process for hydrocyanation without prior purification or separation.
10. (Previously Presented) The process of claim 2, wherein the nickel hydrocyanation catalyst comprises a bidentate phosphite ligand.
11. (Previously Presented) The process of claim 1, wherein the nickel hydrocyanation catalyst comprises the bidentate phosphite ligand having the formula



12. (Amended) A process comprising:

reacting 2-methyl-3-butenenitrile with hydrogen cyanide to produce 2-methylglutaronitrile in the presence of a zero-valent nickel catalyst and a promoter obtained as a byproduct from a titanium ore chlorination process, wherein said byproduct consists essentially of iron (II) chloride, manganese (II) chloride, sand, and coke.

13. (Amended) A process comprising:

reacting a mixture of pentenenitriles with hydrogen cyanide to produce both adiponitrile and 2-methylglutaronitrile in the presence of a zero-valent nickel catalyst and a promoter obtained as a byproduct from a titanium ore chlorination process, wherein said byproduct consists essentially of iron(II) chloride, manganese (II) chloride, sand, and coke.

14. (New) The process of claim 2, wherein the titanium-containing material is rutile ore; ilmenite ore; anatase ore; beneficiates of rutile, ilmenite, or anatase ore; titanium containing by-products or slags; and mixtures thereof.

15. (New) The process of claim 2, wherein in step d) the byproduct material is added to the hydrocyanation reaction mixture directly as a solid, or as a slurry in either a hydrocyanation solvent or a mixture of nitriles, or as a homogeneous solution after filtration from materials which are not dissolved in the mixture of substrate nitriles or solvent.